AWARD NUMBER: W81XWH-14-1-0198

TITLE: Cognitive Rehabilitation: ACTION Training for Soldiers with Executive Dysfunction

PRINCIPAL INVESTIGATOR: Mary Vining Radomski

CONTRACTING ORGANIZATION: Allina Health

REPORT DATE: October 2015

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE
October 2015

2. REPORT TYPE
Annual

3. DATES COVERED
30 Sep 2014 - 29 Sep 2015

4. TITLE AND SUBTITLE

Cognitive Rehabilitation: ACTION Training for Soldiers with Executive Dysfunction

5a. CONTRACT NUMBER

5b. GRANT NUMBER
W81XWH-14-1-0198

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Mary Vining Radomski

E-Mail: mary.radomski@allina.com

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Allina Health System
800 E. 28th Street
Minneapolis, MN 55407-3723

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

A team of researchers from the Courage Kenny Research Center (CKRC), Traumatic Brain Injury Center at Fort Campbell, KY (TBIC-FC) has developed an intervention to teach SM with mTBI to set implementation intentions called ACTION (AutomatiC iniTiation of IntentiONs) sequence training. This pilot study will evaluate: 1) the practicality of ACTION instructional methods and 2) the efficacy of ACTION sequence training in achieving personal goals and performance on a task that challenges executive function using a small randomized controlled trial.

Aim 1: Finalize ACTION curriculum/ manuals; field test

Aim 2: Evaluate ACTION instructional methods (the extent to which SM with mTBI are able to learn to establish IF-THEN statements that have the potential to trigger automatic enactment of goal-actions and the extent to which SM with mTBI report the training experience as satisfactory and beneficial).

Aim 3: Test the efficacy of adding ACTION training to standard care metacognitive strategy instruction (MSI), together called Target Acquisition Practices (Group 1) by evaluating the extent to which training 1) improves SM's with mTBI ability to perform a complex test of executive function (e.g. Hotel Test) and 2) advances progress towards self-identified goals as compared to a control condition.

15. SUBJECT TERMS
mild traumatic brain injury; implementation intentions; executive function; metacognitive strategy instruction

16. SECURITY CLASSIFICATION OF: U			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			USAMRMC
Unclassified	Unclassified	Unclassified	Unclassified	19	**19b. TELEPHONE NUMBER** *(include area code)*

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

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1. **INTRODUCTION:** Narrative that briefly (one paragraph) describes the subject, purpose and scope of the research.

Goal-aligned conduct is central to military success. However, many service members (SM) with mild traumatic brain injury symptom complex (mTBI-sc) have difficulty implementing goal-directed actions. Literature supports the notion that goal setting alone is not enough to facilitate real-time goal actions; suggesting, instead, that greater success is found in setting implementation intentions (II) (Gollwitzer & Sheeran, 2006). For this proof of concept study, we have developed a cognitive intervention called ACTION (**AutomatiC iniTiation of IntentiONs) sequence training in which SM with mTBI-sc are taught to set II.** We will conduct a small randomized controlled trial in order to evaluate: 1) the practicality of instructional methods used to teach SM with mTBI-sc to perform the ACTION sequence and 2) the efficacy of ACTION sequence training in facilitating SM goal achievement and performance of a task that challenges executive function. If the results are positive, a larger study would be conducted to determine the impact of ACTION sequence training on SM performance on military-relevant tasks and goals.

Gollwitzer PM, Sheeran P (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology, 38*, 69-118.

2. **KEYWORDS:** Provide a brief list of keywords (limit to 20 words).

Mild traumatic brain injury symptom complex
Executive function
Metacognitive strategy instruction
ACTION sequence
Implementation intention
Goal
Goal-action
Prospective memory
Rehabilitation
Goal attainment scaling
Self-regulation
Goal management

3. **ACCOMPLISHMENTS:** The PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction.

What were the major goals of the project?
List the major goals of the project as stated in the approved SOW. If the application listed milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion.

Table 1. Goals, milestones, and status	**Estimated timeline *Updated timeline**	**Status**	**% study activities completed**
Specific Aim 1: To finalize ACTION training curriculum; develop manuals; field test	OCT-14 to APR-15		
Subtask 1: Establish contracts and critical documents for all participating institutions, contracts, and consultants	OCT-14 to NOV-14	Done	100%
Subtask 2: Finalize intervention protocol	DEC-14 to AUG-15	Done	100%
Subtask 3: Obtain IRB and ORP/HRPO approval to conduct study	JAN-15 to APR-15 *** AUG-15 – DEC-15**	In-process	30%
Subtask 4: Prepare local team and site to conduct study	FEB-15 to APR-15	In-process	75%
Specific Aims 2 & 3: (2) To evaluate ACTION sequence training instructional methods (the extent to which SM with mTBI-sc are able to learn to establish IF-THEN statements that have the potential to trigger automatic enactment of goal-actions and the extent to which SM with mTBI-sc report the training experience as satisfactory and beneficial); (3) To test the efficacy of adding ACTION sequence training to standard care metacognitive strategy instruction (MSI)	MAY-15 to JUL-16 ***JAN – 16 to DEC-16**		
Subtask 1: Conduct feasibility study	MAY-15 to JUL-16 *** JAN – 16 to DEC-16**	Not started	0%
Subtask 2: Assure intervention fidelity and adherence to all IRB requirements	MAY-15 to JUL-16 *** JAN – 16 to DEC-16**	Not started	0%
Major Task: Data Analysis & Dissemination	DEC-16 to FEB-17	Not started	0%

What was accomplished under these goals?

During Year 1, we have made progress towards Specific Aim 1 (finalize ACTION training curriculum; manualize assessment and intervention procedures; field test; finalize and submit for IRB review/approval; train research team to conduct study).

Subtask 2 Major activity - Finalize ACTION training curriculum and manualize assessment and intervention procedures

Specific objectives: Develop manualized assessment and intervention protocols to assure data collection and treatment fidelity during the study.

Significant results or key outcomes (major findings, developments, conclusions, and/or achievements): Based on previous Courage Kenny Research Center (CKRC) pilot work, expert consultation, and team work, the ACTION team developed a pre-posttesting manual and a 6-session intervention manual that specifies how MSI and ACTION will be provided to participants.

Subtask 2 Major activity: Conduct a pre-pilot study on civilians at CKRC

Specific objectives:

Specific aim 1- Assess whether 2 participants with ABI who receive ACTION training demonstrate pre-post improvements in novel task performance (Hotel Test) and self-reported functioning (goal attainment scaling, the Canadian Occupational Performance Measure [COPM], Comprehensive Assessment of Prospective Memory).

Specific aim 2- Evaluate the clinical utility and user satisfaction with manualized assessment and intervention procedures.

Rationale: A pre-pilot study was conducted at CKRC in July-August 2015 using ACTION pre-posttesting and intervention manuals in order to determine their utility and need for further modification prior to using in the ACTION trial at Fort Campbell Intrepid Spirit TBI Clinic.

Methods: The pre-pilot study was a case series of two subjects who consented to participate.

Participants: Two current or former outpatients with known executive dysfunction agreed to participate. Both had a history of acquired brain injury and were receiving services at the Courage Kenny Rehabilitation Institute (CKRI) – Abbott Northwestern Hospital Brain Injury Clinic. Both participants were women who were living independently in the community and who were working full time during their outpatient rehabilitation and during their participation in the pre-pilot study.

Significant results or key outcomes (major findings, developments, conclusions, and/or achievements): Both participants completed pre- and posttesting and the 6-session intervention. However, both had explainable absences or scheduling issues such that rather than 6 sessions over 3 weeks, Subject 1 received the 6 sessions over 6 weeks and Subject 2 received the 6 sessions over 4 weeks. Both made pre-post improvements in the primary outcome measures (Table 2). Changes on the Hotel task and CAPM have not yet been fully analyzed. In addition to realizing performance improvements, participants' responses to an Experience Survey suggested that they were satisfied with the ACTION intervention. Using a 0-10 scale (with 0 = not at all useful and 10 = Very useful), Subject 1 rated the helpfulness of ACTION in meeting personal goals as 7 and Subject 2 rated it as 8.

Table 2. Key outcomes of CKRC pre-pilot

Outcome measure scores	Subject 1	Subject 2	Interpretation
COPM (performance) - PRE	3.7	3.3	Each participant identified 3 problem areas that were the focus of intervention. Pre and post test performance in each areas was self-reported using a 1-10 scale (higher scores reflect better self-perceived performance). Both subjects reported better average performance in the 3 goal areas at posttest.
COPM (performance) - POST	6.0	6.0	
GAS post	61	54.4	Goal attainment was measured on the 3 goals set by participants at Session 1. Both subjects had goal attainment levels that exceeded 50, which indicated better an expected goal achievement (Ottenbacher & Cusick, 1990).

Ottenbacher, K.J., & Cusick, A. (1990). Goal attainment scaling as a method of clinical service evaluation. *American Journal of Occupational Therapy, 44* (6), 519-25.

Subtask 3 Major activity: Submit ACTION protocol to Dwight D. Eisenhower Army Medical Center (DDEAMC) IRB.

Specific objectives: Develop a research protocol that is approved by DDEAMC and USAMRMC HRPO.

Significant results or key outcomes (major findings, developments, conclusions, and/or achievements): The ACTION protocol was approved by the Medical Staff Executive Committee of the Blanchfield Army Community Hospital on June 23, 2015 and submitted to DDEAMC IRB on August 19, 2015.

However, no further action as been taken on the protocol submission at DDEAMC because of other priorities associated with the USAMRMC's decision not to renew its IRBNet contract.

Subtask 4 Major activity: Prepare the local team and site to conduct the study

Specific objectives: Develop a rubric for scoring the correctness and specificity of implementation intentions written by SM who receive ACTION training.

Rationale: One of the goals of the ACTION Trial is to evaluate whether or not SM with mTBI-symptom complex can learn to set implementation intentions. For this study, we plan to instruct service members in successful self-regulation that involves specifying a goal plan (goal management) and employing a technique that involves linking an intended goal-action with a context-specific trigger from which an implementation intention is written (Action Sequence). ACTION sequence training is comprised of didactic education (discussion and worksheets), practice simulations (clinic tasks), and contextually-rich opportunities to employ the ACTION sequence in daily life by writing II's pertaining to 1 of 3 personal goals.

Methods: SM will receive feedback for written II following clinical practice tasks and verifiable homework tasks. The study team will evaluate SM competence in setting II for verifiable homework tasks and goal-related homework using a scoring rubric initially based on criteria outlined by van Osch and colleagues (2010), described below.

IF statements (0 – non-specific; 1 – medium specific; 2 – highly specific)

- Non-specific conditions, context, or trigger situation
- Medium specific conditions (variety of situational triggers present)
- Highly specific conditions, context, or trigger situation (e.g., a singular set of conditions, context, or triggers specified)

THEN statements (0 – non-specific; 1 – medium specific; 2 – highly specific)

- Non-specific (many actions possible)
- Medium specific (more than 1 actions possible)
- Highly specific (1 actions possible)

Expanding on Van Osch's criteria, our team designed the ACTION trial scoring rubric APPENDIX A. In doing so, we created II simulations based on known goal areas identified by SM at the Ft. Campbell Intrepid Spirit. ACTION team raters then scored each II independently. Following each found of scoring, raters discussed rationale and refined the ACTION trial scoring rubric accordingly. ACTION team members completed 7 rounds of scoring to apply scoring rubric to numerous II scenarios and in order to achieve an acceptable level of scoring agreement. Significant results or key outcomes (major findings, developments, conclusions, and/or achievements): We used analytical scoring to assign a score (0, 1, or 2) to each dimension of the II (the IF-component and the THEN- component). Evaluating the percent of rater agreement is often used to evaluate inter-rater reliability of scoring rubrics (Jonsson & Svingby, 2007). In our case, 2 independent raters were able to achieve a 95% scoring agreement on 30 II statements (30 IF components, 30 THEN components). Scoring agreement exceeding 90% is generally considered to be a good level of consistency (Jonsson & Svingby, 2007).

Another outcome of our efforts to establish inter-rater reliability was that it led to some modifications being made to our method for minimizing rater bias. Previously, we had planned to have site-co PI provide feedback to participants regarding correctness/specificity of their IIs, with IIs scored by an offsite, independent rater. However, recognizing that a potential for bias was present in either scenario, we decided to have the site co-PI score all IIs with intermittent probes conducted by an independent rater to ensure scoring consistency and integrity. Any scoring disagreements will be discussed and the scoring rubric will be revisited and revised, if indicated.

Jonsson, A. & Svingby, G. (2007). The use of scoring rubrics: reliability, validity and educational consequences. *Educational Research Review, 2,* 130-144.

van Osch, L., Lechner, L., Reubsaet, A., & De Vries, H. (2010). From theory to practice: an explorative study into the instrumentality and specificity of implementation intentions. *Psychology and Health*, *25*, 351-364.

What opportunities for training and professional development has the project provided?
If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

Nothing to report.

How were the results disseminated to communities of interest?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how the results were disseminated to communities of interest. Include any outreach activities that were undertaken to reach members of communities who are not usually aware of

these project activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

Dr. Jenny Owens (Site co-PI) reported on the MOMRP Interim Progress Report meeting at Fort Detrick on July 30, 2015. Here is how the Panel's recommendations were addressed:

Recommendation	Response
The PI should recruit an additional co-I to ensure the study completion since the Site PI was no longer at the performing institution full time.	Mark Showers, MS, OTR/L is an occupational therapist in the Fort Campbell Intrepid Spirit TBI Clinic. He was a consultant to the study but has agreed to also serve as Site Co-PI (with the approval of Dr. Zola, Clinic Director).
PI should describe how bias will be avoided in scoring.	We will attempt to minimize potential bias introduced by using personnel at CKRC to either score or double-check Dr. Owens' scoring. CKRC personnel will not know group assignment of participants. -Responses to all descriptive, pre-post questionnaire data will be sent directly to CKRC for scoring; Dr. Owens will not score these measures. -Dr. Owens will fill in observational data on the Hotel task score sheet but CKRC will actually tally/calculate scores. -Dr. Owens will score implementation intentions written by ACTION participants for correctness and specificity. Copies of de-identified implementation intentions will be sent to CKRC on a monthly basis along with other study data. Three times during data collection, CKRC personnel will randomly select 3 subjects' implementation intentions for double-scoring by a trained CKRC rater. The second rater's scores will be compared to that of Dr. Owens, with any disagreement resolved through discussion and consensus.

What do you plan to do during the next reporting period to accomplish the goals?
If this is the final report, state "Nothing to Report."

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

Goals and objectives	Planned activities for the next quarter
Subtask 3: Obtain IRB and ORP/HRPO approval to conduct study	Expeditiously provide any additional requested information in order to advance DDEAMC IRB approval; submit to HRPO for approval once approved by DDEAMC.
Subtask 4: Prepare local team and site to conduct study	-Ship all supplies/materials used in CKRC pre-pilot to FC-TBIC. Support Dr. Owen's practice and skill development with the aforementioned. -Develop subject packets that include manualized intervention, homework booklet, handouts -Consult with Dr. Andrew Prestwich (II expert) regarding II scoring rubric to ascertain any need for revisions
Specific Aims 2 & 3: (2) To evaluate ACTION sequence training instructional methods (3) To test the efficacy of adding ACTION sequence training to standard care MSI	Based on the current circumstances with the IRB at DDEAMC (and Army-wide), it is unlikely that the protocol will have necessary approvals
Subtask 1: Conduct feasibility study	
Subtask 2: Assure intervention fidelity and adherence to all IRB requirements	
Major Task: Data Analysis & Dissemination	Develop a case report for publication based on the results of the CKRC pre-pilot.

4. IMPACT: Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to:

What was the impact on the development of the principal discipline(s) of the project?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how findings, results, techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research in the principal disciplinary field(s) of the project. Summarize using language that an intelligent lay audience can understand (Scientific American style).

Nothing to Report.

What was the impact on other disciplines?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

Nothing to Report.

What was the impact on technology transfer?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including:

- *transfer of results to entities in government or industry;*
- *instances where the research has led to the initiation of a start-up company; or*
- *adoption of new practices.*

Nothing to Report.

What was the impact on society beyond science and technology?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as:

- *improving public knowledge, attitudes, skills, and abilities;*
- *changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or*
- *improving social, economic, civic, or environmental conditions.*

Nothing to Report.

5. **CHANGES/PROBLEMS:** The Project Director/Principal Investigator (PD/PI) is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction. If not previously reported in writing, provide the following additional information or state, "Nothing to Report," if applicable:

Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the agency.

Nothing to report.

Actual or anticipated problems or delays and actions or plans to resolve them
Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

Year 1 of this study did not proceed as quickly as planned for a number of reasons, some of which were outside of the PI and the research team's control.

- The amount of time to establish contracts with consultants and, especially with, subaward (ORAU) took longer than anticipated and delayed some of the progress in meeting goals of Aim 1 and Aim 2 (transposing the original civilian protocol to a military relevant version; manualization; starting data collection).
- After conducting a pilot of the revised materials/manualization at CKRC (July – August 2015), the protocol was revised and submitted to the Dwight D. Eisenhower Army Medical Center Institutional Review in August 2015. However, we were notified in mid-September 2015, that the protocol was not proceeding through the review process because of other now urgent activities within the DDEAMC IRB related to the USAMRMC's decision not to renew the IRB-Net contract. We do not know how long our IRB review will be on hold.

Changes that had a significant impact on expenditures
Describe changes during the reporting period that may have had a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

Because of the above-delays, we have not been able to begin collected data in the TBI clinic at Fort Campbell. Therefore, Allina Health Sponsored Projects Administration (parent company of CKRC) is in the process of submitting a request to our USAMRMC contract specialist to revise our Year 2 budget, moving unused Year 1 dollars to cover the work that will now be performed in Year 2.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents
Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards, and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee (or equivalent) and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

Significant changes in use or care of human subjects

None.

Significant changes in use or care of vertebrate animals.

N/A

Significant changes in use of biohazards and/or select agents

N/A

6. PRODUCTS: List any products resulting from the project during the reporting period. If there is nothing to report under a particular item, state "Nothing to Report."

- **Publications, conference papers, and presentations**
  Report only the major publication(s) resulting from the work under this award.

  Journal publications. *List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Identify for each publication: Author(s); title; journal; volume: year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

Nothing to Report

  Books or other non-periodical, one-time publications. *Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: Author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (e.g., book, thesis or dissertation); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

Nothing to Report

  Other publications, conference papers, and presentations. *Identify any other publications, conference papers and/or presentations not reported above. Specify the*

status of the publication as noted above. List presentations made during the last year (international, national, local societies, military meetings, etc.). Use an asterisk (*) if presentation produced a manuscript.

Nothing to Report

- **Website(s) or other Internet site(s)**
  List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

None.

- **Technologies or techniques**
  Identify technologies or techniques that resulted from the research activities. In addition to a description of the technologies or techniques, describe how they will be shared.

Nothing to report.

- **Inventions, patent applications, and/or licenses**
  Identify inventions, patent applications with date, and/or licenses that have resulted from the research. State whether an application is provisional or non-provisional and indicate the application number. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.

None.

- **Other Products**
  Identify any other reportable outcomes that were developed under this project. Reportable outcomes are defined as a research result that is or relates to a product, scientific advance, or research tool that makes a meaningful contribution toward the understanding, prevention, diagnosis, prognosis, treatment, and/or rehabilitation of a disease, injury or condition, or to improve the quality of life. Examples include:
  - *data or databases;*

- *biospecimen collections;*
- *audio or video products;*
- *software;*
- *models;*
- *educational aids or curricula;*
- *instruments or equipment;*
- *research material (e.g., Germplasm; cell lines, DNA probes, animal models);*
- *clinical interventions;*
- *new business creation; and*
- *other.*

None.

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?
Provide the following information for: (1) PDs/PIs; and (2) each person who has worked at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). If information is unchanged from a previous submission, provide the name only and indicate "no change."

Example:

Name:	*Mary Smith*
Project Role:	*Graduate Student*
Researcher Identifier (e.g. ORCID ID):	*1234567*
Nearest person month worked:	*5*
Contribution to Project:	*Ms. Smith has performed work in the area of combined error-control and constrained coding.*
Funding Support:	*The Ford Foundation (Complete only if the funding support is provided from other than this award).*

No change.

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

If the active support has changed for the PD/PI(s) or senior/key personnel, then describe what the change has been. Changes may occur, for example, if a previously active grant has closed and/or if a previously pending grant is now active. Annotate this information so it is clear what has changed from the previous submission. Submission of other support information is not necessary for pending changes or for changes in the level of effort for active support reported previously. The awarding agency may require prior written approval if a change in active other support significantly impacts the effort on the project that is the subject of the project report.

Nothing to report.

What other organizations were involved as partners?
If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that were involved with the project. Partner organizations may have provided financial or in-kind support, supplied facilities or equipment, collaborated in the research, exchanged personnel, or otherwise contributed.
Provide the following information for each partnership:
Organization Name:
Location of Organization: (if foreign location list country)
Partner's contribution to the project (identify one or more)

- *Financial support;*
- *In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);*
- *Facilities (e.g., project staff use the partner's facilities for project activities);*
- *Collaboration (e.g., partner's staff work with project staff on the project);*
- *Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site); and*
- *Other.*

Nothing to report.

Appendix: A

ACTION Trial Operational Definitions for Implementation Intentions

Guiding Principles

- IF components are scored independent of THEN components.
- IF/THEN statements are judged in consideration of known problem or goal area.
- To score 2 points, IF and THEN statements must be specific enough that the written trigger and intended action statements are clear to an objective scorer.
- When IF or THEN statements are illogical, evaluate relative to alignment with problem area (if known) and companion IF or THEN components.
- For this study, IIs are set to prompt specific behaviors that a participant plans to do today, tomorrow, or sometime this week that is actionable relative to one of his/her goals.
- Because specificity is central to II effectiveness, when in doubt about scoring, round down.

IF Statements

Best practice/ideal: IF statements describe unambiguous conditions that should trigger action when encountered.
Notes: For this study, every IF statement must include a temporal modifier: (e.g., today, this afternoon, this morning, this evening, today at 2pm, tomorrow, or "day of week" [presumed to be this week]).

Examples:

- "When it's Friday and I'm driving to work…" (2 points)
- "If I notice my furniture is dusty today…" (2 points)
- "When I get to work in the morning (1 point; must specify "this morning," "tomorrow morning" or "day of the week morning")

Score	Definition - criteria		Example
0	Wrong-Not included	SM did not write an IF statement or IF statement does not describe a personally relevant action situation	Doesn't describe a personally relevant action situation: If/when Obama leaves office… If/when my cousin's wife has a baby… Statement seems illogical relative to problem area (and unlikely to encounter) or illogical relative to proposed action (Then) If I'm wearing a red shirt (problem = road rage)
1	Somewhat specific	IF statement describes 1 condition in the situation in which the intended action would be feasible	If I'm tired…(when, where?) If I notice I feel anxious (when, where, under what circumstances?) When I finish brushing my teeth (tomorrow morning, after lunch today, this evening?),

2	Highly specific	IF statement describes at least 2 conditions in a situation in which the intended action would be feasible. IF statement includes a temporal modifier.	If I'm tired after work today… If I feel anxious around other people today… When I finish brushing my teeth before bed tonight…

THEN Statements

Best practice/ideal: THEN statements are actions that are described with a sufficient amount of precision and direction, so that significant deliberation would not be required once the critical situation is encountered.
Notes:

- THEN statements should specify what the subject intends to do (not the actions of another individual).
- THEN statements should reflect action, observable (e.g., walking) or not (e.g., doing deep breathing). A THEN statement that specifies "knowing" does not reflect action and the SM would not receive the full 2 points.
- THEN statement actions should be clear and verifiable to an outsider. That is, "I will take my morning pills" could be verified; "…take my pills" would be more difficult to verify (does s/he mean ALL pills, vitamins, etc.?).
- Routinely encountered objects of action *may* require a greater degree of specificity in order to be scored as a 2 (e.g., forms, homework, "doctor").
- Novel objects of action (e.g., bills, postcards, boxes, thank you cards, letters) do not require further description to be scored as a 2.
- If the problem or goal area describes a quantifiable desired change (where end-state is verifiable), THEN action statements must be quantifiable/specific in order to be scored as a 2. (e.g., goal areas: drink 64 oz of water a day, finish building my deck, recover from shoulder surgery, read the Bible in a year).
- If the problem or goal area describes a go/no-go situation, THEN action statements *may* assume a go/no-go format and still be scored a 2.

Score	Definition - criteria		Example
0	Wrong – Not included	SM did not include an action statement or the Then statement does not describe a personally relevant action.	…Then my wife will call the doctor …Then the theaters will close Statement does not seem directive or actionable relative to problem area or If component [Problem interacting with kids: Then – I'll get a haircut]
1	Somewhat specific	Then statement describes a general intended action that would be feasible	…Then I will try to relax (by doing what?) …Then I will turn in the form to OT (exactly what form?) If we can't tell exactly what the person would do, score it a1.

			Without adequate specificity, the person would have to problem solve when prompted by the trigger and that is a barrier to automatic action.
2	Highly specific	Then statement described with a sufficient amount of precision and direction, so that significant deliberation would not be required once the critical situation would be encountered.	…Then I will try to relax by doing my breathing exercises …Then I will take a walk around the block …Then I will turn in my OT homework form